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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,952	04/21/2004	Marc Langlois	51804	7182

53884 7590 06/01/2007  
ROHM AND HAAS ELECTRONIC MATERIALS LLC  
455 FOREST STREET  
MARLBOROUGH, MA 01752

EXAMINER

MILLER, MICHAEL G

ART UNIT	PAPER NUMBER
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1709

MAIL DATE	DELIVERY MODE
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06/01/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.		Applicant(s)	
	10/828,952		LANGLOIS ET AL.	
	Examiner Michael G. Miller <i>MGM</i>		Art Unit 1709	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) 2 and 3 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>2 NOV 2004</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C.

121:

- I. Claim 1, drawn to a method of coating a substrate, classified in class 427, subclass 248.1.
- II. Claim 2, drawn to an apparatus for coating a substrate, classified in class 118, subclass 715.
- III. Claim 3, drawn to a conductive substrate with an applied coating, classified in class 428, subclass 411.1.

2. Inventions I and II are related as process and apparatus for its practice.

The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another and materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case the apparatus of II can be used to deliver an etching material.

3. Inventions I and III are related as process of making and product made.

The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the invention of III can be made by a dipping process.

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4. Inventions II and III are related as apparatus and product made. The inventions in this relationship are distinct if either or both of the following can be shown: (1) that the apparatus as claimed is not an obvious apparatus for making the product and the apparatus can be used for making a materially different product or (2) that the product as claimed can be made by another and materially different apparatus (MPEP § 806.05(g)). In this case the invention of III can be made by dipping in liquid.

5. Restriction for examination purposes as indicated is proper because all these inventions listed in this action are independent or distinct for the reasons given above and there would be a serious search and examination burden if restriction were not required because one or more of the following reasons apply:

- (a) the inventions have acquired a separate status in the art in view of their different classification;
- (b) the inventions have acquired a separate status in the art due to their recognized divergent subject matter;
- (c) the inventions require a different field of search (for example, searching different classes/subclasses or electronic resources, or employing different search queries);
- (d) the prior art applicable to one invention would not likely be applicable to another invention;
- (e) the inventions are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

**Applicant is advised that the reply to this requirement to be complete must include (i) an election of a invention to be examined even though the requirement may be traversed (37 CFR 1.143) and (ii) identification of the claims encompassing the elected invention.**

The election of an invention may be made with or without traverse. To reserve a right to petition, the election must be made with traverse. If the reply does not distinctly and specifically point out supposed errors in the restriction requirement, the election shall be treated as an election without traverse. Traversal must be presented at the time of election in order to be considered timely. Failure to timely traverse the requirement will result in the loss of right to petition under 37 CFR 1.144. If claims are added after the election, applicant must indicate which of these claims are readable on the elected invention.

If claims are added after the election, applicant must indicate which of these claims are readable upon the elected invention.

Should applicant traverse on the ground that the inventions are not patentably distinct, applicant should submit evidence or identify such evidence now of record showing the inventions to be obvious variants or clearly admit on the record that this is the case. In either instance, if the examiner finds one of the inventions unpatentable over the prior art, the evidence or admission may be used in a rejection under 35 U.S.C. 103(a) of the other invention.

6. During a telephone conversation with S. Matthew Cairns on 7 May 2007 a provisional election was made without traverse to prosecute the invention of a method of coating a substrate, claim 1. Affirmation of this election must be made

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by applicant in replying to this Office action. Claims 2-3 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Powers (U.S. Patent 4,714,488, hereinafter '488).

a. With regard to Claim 1, '488 teaches a method of coating a surface of a substrate, comprising:

- i. Providing and directing a chemical vapor deposition stream comprising a coating precursor (Figure 1, 27-28) and a combustible medium (Figure 1, "FUEL & O<sub>2</sub>") toward the substrate (Figure 1, 25) and combusting the stream to provide a reacted coating precursor in a gaseous plume (Figure 1, 23); and
- ii. Modifying the plume (Figure 1, 23) by causing the plume to pass through an orifice (Figure 6, 80-81) of a shield (Figure 6, 79) prior to the plume contacting the surface of the substrate (Figure 1, 25) and by controlling the size of the orifice through which the

plume passes (the size of the orifice is inherently controlled by the size of the holes on the burner);

iii. Causing the plume (Figure 1, 23) to contact a portion of the surface (Figure 1, 25) to deposit a coating thereon.

iv. '488 teaches passing the chemical stream through the orifice in the shield before combustion of the stream.

v. It is inherent in CVD that the coating thickness at any point on a substrate is at least partially controlled by the temperature of the substrate exposed to the plume at that point, since the temperature is a controlling factor in the kinetics of the reaction of the precursor with the surface. It is also inherent that the temperature of the substrate will at least partially control the degree of condensation at that point, as the point of condensation is a function of temperature.

vi. It is inherent in CVD that the temperature of the substrate will be at least partially controlled by the size of the orifice through which the plume passes, since the size of the orifice determines the size of the plume and therefore the amount and area of thermal energy transfer from the plume to the substrate. A smaller orifice creates a smaller plume, which restricts the area the plume can heat and the amount of energy the plume can carry in a given time.

vii. It is inherent in CVD that the coating thickness will change in response to the substrate temperature and plume flow

characteristics. If the temperature of the substrate is too low, the chemical reaction with the activated precursor will not occur and no coating will be deposited; if the temperature of the substrate is too high, the activated precursor will be destroyed and no coating will be deposited. If the plume flow is low, a thinner coating will occur because of an absence of precursor; if the plume flow is high, a thicker coating will occur because of a presence of precursor.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patents 4,810,276, 5,208,246, 5,708,092, 5,180,411 and 6,260,385 all deal with combustion CVD methods and apparatuses similar to the art relied upon.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael G. Miller whose telephone number is (571) 270-1861. The examiner can normally be reached on MTWR 7:30 - 5:00, F 7:30 - 4:00, Eastern Time.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Cleveland can be reached on (571) 272-1418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MGM

*MGM*  
MICHAEL B. CLEVELAND  
SUPERVISORY PATENT EXAMINER